

REMARKS

The Final Office Action of April 25, 2005, has been received and reviewed.

Claims 1-9 and 12-34 are currently pending in the above-referenced application. Of these, claims 4, 9, and 23-34 have been withdrawn from consideration pursuant to a species election. Claims 1-3, 5-8, and 12-22, which have been considered, stand rejected.

Reconsideration of the above-referenced application is respectfully requested.

Supplemental Information Disclosure Statement

Please note that a Supplemental Information Disclosure Statement was filed in the above-referenced application on May 2, 2005, but that the undersigned attorney has not yet received any indication that the reference cited in the Supplemental Information Disclosure Statement has been considered in the above-referenced application. It is respectfully requested that the reference cited in the Supplemental Information Disclosure Statement of May 2, 2005, be considered and made of record in the above-referenced application and that an initialed copy of the Form PTO/SB/08A that accompanied that Supplemental Information Disclosure Statement be returned to the undersigned attorney as evidence of such consideration.

Rejections Under 35 U.S.C. § 102(e)

Claims 1-3, 5-8, and 11-20 have been rejected under 35 U.S.C. § 102(e) for reciting subject matter which is purportedly anticipated by the disclosure of U.S. Patent 6,255,737 to Hashimoto (hereinafter "Hashimoto").

A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single reference which qualifies as prior art under 35 U.S.C. § 102. *Verdegaal Brothers v. Union Oil Co. of California*, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). The identical invention must be shown in as complete detail as is contained in the claim. *Richardson v. Suzuki Motor Co.*, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989).

With respect to inherency, M.P.E.P. § 2112 provides:

The fact that a certain result or characteristic may occur or be present in the prior art is not sufficient to establish inherency of that result or characteristic. *In re Rijckaert*, 9 F.3d 1531, 1534, 28

USPQ2d 1955, 1957 (Fed. Cir. 1993) . . . ‘To establish inherency, the extrinsic evidence ‘must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill . . .’ *In re Robertson*, 169 F.3d 743, 745, 49 USPQ2d 1949, 1950-51 (Fed. Cir. 1991).

The description of Hashimoto is directed to, among other, things, a process that includes applying a preformed sheet of polyimide 64 to a wafer 60 carrying a plurality of semiconductor devices. FIGs. 13A and 13B; col. 11, lines 45-48. Apertures 64a are formed through the preformed sheet 64 following application thereof to the wafer 60 to expose bond pads 62 of the semiconductor devices through the preformed polyimide layer 64. FIG. 13C; col. 11, lines 49-52. Conductive material 68 may then be introduced into the apertures 64a and into contact with the bond pads 62. FIG. 13D; col. 11, lines 49-54. As noted in the Final Office Action, Hashimoto also indicates that apertures may be formed through a stress relieving layer by “predrilling.” Col. 11, lines 63-66.

Hashimoto also notes, at col. 4, line 66, to col. 5, line 20, that *every* bond pad (electrode 12) of a semiconductor chip 1 is rerouted by wires 3 to an external electrode 5 that is more centrally located over an active surface 1a of the semiconductor chip 1. The wires 3 and redirected external electrodes 5 are at least partially formed by sputtering a layer of aluminum or other conductive material (*e.g.*, conductive material 68) over the entire surface of a stress relieving layer 7 (*e.g.*, preformed sheet of polyimide 64), then patterning the layer of conductive material.

Independent claim 1 recites a method for fabricating a chip-scale package. The method of independent claim 1 includes positioning a preformed polymeric film over a semiconductor device. The preformed polymeric film includes at least one aperture that extends substantially longitudinally therethrough. When the preformed polymeric film is positioned over the at least one semiconductor device, the at least one aperture is in substantial alignment with a corresponding bond pad of the semiconductor device. The method of amended independent claim 1 also includes selectively introducing conductive material into the at least one aperture.

In contrast to independent claim 1, Hashimoto lacks any express or inherent description of *selectively* introducing conductive material into the apertures of a preformed polymeric film. As those of ordinary skill in the art would readily understand from the disclosure of the above-referenced application, “selectively introducing” refers to the process by which the conductive material is introduced (*e.g.*, selective deposition vs. blanket deposition), not to the time (“when”) or the location at which (“where”) (such as at a particular facility, in a particular deposition chamber, etc.) the conductive material is introduced, as has been asserted by the Office. Final Office Action, page 4.

The specification of the above-referenced application, at paragraphs [0062] and [0083], provides nonlimiting examples of selective introduction of conductive material into the apertures of a polymeric film. From these examples, one of ordinary skill in the art would readily understand that “selectively introducing” conductive material results in a structure that includes conductive material within the apertures of a polymeric film and substantially no conductive material on an exposed surface of the polymeric film, as would occur during blanket deposition processes.

Moreover, as evidenced by the discussions at pages 155-156 of Wolf et al., *Silicon Processing for the VLSI Era, Volume 1 – Process Technology* (Lattice Press, 1986) (hereinafter “Wolf”) and U.S. Patent 6,245,674 to Sandhu et al. (hereinafter “Sandhu”), one of ordinary skill in the art would readily understand the meaning of the term “selective” when used in conjunction with processes for depositing or otherwise forming material layers. A copy of Wolf is enclosed for the sake of convenience.

The express description of Hashimoto is limited to blanket deposition of conductive films over the stress relieving layers described therein in order to introduce conductive material into the apertures of such stress relieving layers and, thus, into contact with the bond pads (*e.g.*, electrodes 12) of a semiconductor device (*e.g.*, semiconductor chip 1). The result of such blanket deposition is that conductive material covers the stress relieving layer and must subsequently be removed therefrom to prevent shorting.

Further, as Hashimoto discloses the suitability of blanket deposition processes for introducing conductive material 68 into the apertures 64a of a preformed polyimide plate 64, it is

evident that the introduction of conductive material 68 into the apertures 64a is not necessarily, or inherently, selective.

Therefore, Hashimoto does not anticipate each and every element of amended independent claim 1, as would be required to maintain the 35 U.S.C. § 102(e) rejection of independent claim 1.

Each of claims 2, 3, 5-8, and 12-20 is allowable, among other reasons, for depending either directly or indirectly from claim 1, which is allowable.

Claim 19 is further allowable since Hashimoto does not expressly or inherently describe placing a preformed polymeric film on at least a portion of a peripheral edge of a semiconductor device. While Hashimoto does note that a polyimide plate 64 may be “adhered to a wafer 60” (col. 11, lines 45-47), Hashimoto does not mention that the polyimide plate 64 extends onto peripheral edges of the wafer or any of the semiconductor devices carried thereby or that such extension of the polyimide plate 64 onto the peripheral edges is necessary, or inherent.

Claim 20 is additionally allowable since Hashimoto lacks any express or inherent description of placing polymeric material at least laterally adjacent a conductive structure. Instead, the description of Hashimoto is limited to forming “outermost layer[s] (protective layer[s]),” which partially surround conductive structures. Col. 12, lines 50-52 and 62-64.

In view of the foregoing, it is respectfully requested that the 35 U.S.C. § 102(e) rejections of claims 1-3, 5-8, and 11-20 be withdrawn.

Rejections Under 35 U.S.C. § 103(a)

Claims 21 and 22 stand rejected under 35 U.S.C. § 103(a) for being drawn to subject matter which is purportedly unpatentable over the teachings of Hashimoto, in view of teachings from U.S. Patent 6,294,407 to Jacobs (hereinafter “Jacobs”).

The standard for establishing and maintaining a rejection under 35 U.S.C. § 103(a) is set forth in M.P.E.P. § 706.02(j), which provides:

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally

available to one of ordinary skill in the art, to modify the reference or combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

Claims 21 and 22 are both allowable, among other reasons, for depending indirectly from claim 1, which is allowable.

ELECTION OF SPECIES REQUIREMENT

It is respectfully submitted that independent claim 1 remains generic to all of the species of invention of the second group that was identified in the Election of Species Requirement in the above-referenced application. In view of the allowability of these claims, claims 4, 9, and 23-34, which have been withdrawn from consideration, should also be considered and allowed.

M.P.E.P. § 806.04(d).

CONCLUSION

It is respectfully submitted that each of claims 1-9 and 12-34 is allowable. An early notice of the allowability of each of these claims is respectfully solicited, as is an indication that the above-referenced application has been passed for issuance. If any issues preventing allowance of the above-referenced application remain which might be resolved by way of a telephone conference, the Office is kindly invited to contact the undersigned attorney.

Respectfully submitted,



Brick G. Power
Registration No. 38,581
Attorney for Applicants
TRASKBRITT, PC
P.O. Box 2550
Salt Lake City, Utah 84110-2550
Telephone: 801-532-1922

Date: June 27, 2005

BGP/dlm:eg
Document in ProLaw